

PRODUCT DATA SHEET

3050 Series Moisture Analyzers

Accurate, reliable moisture analysis for ppmv or sub-ppmv in industrial applications

The AMETEK 3050 Series utilizes quartz crystal microbalance (QCM) technology, coupled with online verification, in a robust industrial package. These highly sensitive moisture analyzers offer rapid, accurate, and reliable measurements in low-moisture applications. They are designed to minimize operational costs, enhance process efficiency, and ensure maximum plant productivity.

Online Verification Ability

The 3050 Series inspires operator confidence with its unique ability to self-verify. Its dual-concentration moisture generator is a NIST-traceable internal permeation device engineered to perform reliably and maintenance-free. It enables scheduled or on-demand, rapid verification of measurement performance by comparing sensor data with known moisture levels at two distinct concentrations.

Accurate and Responsive

The 3050 Series' proven QCM technology delivers consistent, reliable, and accurate real-time moisture detection. Its wide measurement range provides moisture analysis over the entire process cycle, ensuring the process meets required specifications.

Rugged Design

The 3050 Series is engineered for harsh industrial environments, making it ideal for monitoring natural gas, hydrocarbon process gases, and other industrial gases while maintaining serviceability. It is capable of operating in environments with up to 30% hydrogen sulfide or 100% carbon dioxide and ambient temperatures up to 50°C, extended to 60°C with the high temperature option. Its integrated display permits access to measurement data, alarms, and configuration settings without the need for a hot-work permit.



KEY BENEFITS

- Consumable service life exceeding 3 years minimizing operational expenses
- Built-in traceable verification system with multiple setpoints
- Fast response changes in moisture concentration
- Integrated user interface eliminating requirement for hot-work permit
- High accuracy across measurement range
- Certified for IECEx/ATEX Zone 1

APPLICATIONS

- Natural gas quality in pipelines and custody transfer stations
- Natural gas processing and dehydration
- Feedstock gas quality
- Molecular sieve dryer efficiency
- Cryo-recovery turbo expander inlet and outlet
- Hydrogen recycle gas in continuous catalytic reactor

KEY MARKETS

- Petrochemical
- Natural Gas
- Refinery
- Chemical
- Industrial Gas

PERFORMANCE SPECIFICATIONS

3050 ANALYZER	OLV	SLR	DO	TE
Calibrated Range	0.1 to 2500 ppmv	0.1 to 100 ppmv	0.02 to 100 ppmv	0.01 to 100 ppmv
Accuracy	±0.1 ppmv or ±10% of reading, whichever is greater	±0.03 ppmv or ±10% of reading, whichever is greater	±0.02 ppmv or ±10% of reading, whichever is greater	±0.01 ppmv or ±10% of reading, whichever is greater
Sensitivity	0.1 ppmv or 1% of reading, whichever is greater	0.01 ppmv or 1% of reading, whichever is greater	0.01 ppmv or 1% of reading, whichever is greater	0.005 ppmv or 1% of reading, whichever is greater
Limits of Detection	0.1 ppmv	0.1 ppmv	0.02 ppmv	0.01 ppmv
Dual Moisture Generator	25 ppmv and 75 ppmv	0.5 ppmv and 1.0 ppmv	0.5 ppmv and 1.0 ppmv	0.5 ppmv and 1.0 ppmv
Zero-Gas Module	None	Included	Included	Included

Technology	Quartz Crystal Microbalance (QCM)
Reference Gas	Continuously produced using sample gas and reference dryer with +5,000,000 ppm hour capacity
Online Verification	Internal moisture source with NIST traceable calibration enables on-demand verification of analyzer accuracy without uninstalling the analyzer
Reliability	No routine factory calibration required due to highly stable and reliable nature of QCM sensor
User Interface	Integrated display with optical keypad
Communications	RS485 2-wire Modbus RTU, ethernet (10/100MBS, web interface, and Modbus TCP), ethernet (1GBS, web interface, and Modbus TCP), USB
Inputs	Two remote isolated digital (triggered by contact closure) One isolated analog (selectable 1-5V or 4-20mA for process pressure)
Outputs	Two isolated analog 16-bit, 4-20mA
Alarms	Four contact closures: service, data valid, concentration, and user configurable
Allowable Inlet Pressure	1.3 to 3.3 Bar (20 to 50 psi) gauge; up to 200 Bar (3000 psi) with optional pressure reducer
Exhaust Pressure	0 to 1 Bar (0 to 15 psi) gauge
Sample Gas Temperature	0 to 100°C (32 to 212°F)
Gas Flow Requirements	Approximately 200 sccm. Approximately 1.0 slpm bypass flow for increased speed of response
Instrument Air	Required for SLR/DO/TE versions (ANSI/ISA 7.0.01-1996)
Readout Capability	ppmv, ppmw, lb/mmscf, mg/Nm ³ , and dew point temperature in C or F
Ambient Temperature	-20 to +50°C (-4 to 122°F), up to +60°C (140°F) with high temperature option
Power Requirements	120 ±10% VAC, 50/60 Hz, 100W maximum; 230 ±10% VAC, 50/60 Hz, 100W maximum
Enclosures	IP65
Certifications	ATEX/IECEX Zone 1

SALES, SERVICE & MANUFACTURING

USA - Pennsylvania

150 Freeport Road
Pittsburgh PA 15238
Tel: +1 412 828 9040
Fax: +1 412 826 0399

Canada - Alberta

2876 Sunridge Way NE
Calgary AB T1Y 7H9
Tel: +1 403 235 8400
Fax: +1 403 248 3550

WORLDWIDE SALES AND SERVICE LOCATIONS

USA

Tel: +1 713 466 4900
Fax: +1 713 849 1924

Brazil

Tel: +55 19 2107 4100

Germany

Tel: +49 2159 9136 0
Fax: +49 2159 9136 39

India

Tel: +91 80 6782 3200
Fax: +91 80 6780 3232

Singapore

Tel: +65 6484 2388
Fax: +65 6481 6588

China

Beijing
Tel: +86 10 8526 2111
Fax: +86 10 8526 2141
Chengdu
Tel: +86 28 8675 8111
Fax: +86 28-8675 8141
Shanghai
Tel: +86 21 5868 5111
Fax: +86 21 5866 0969



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